

Recovery Plan Action Status

Plan Name: Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon

Plan Status: Final

Plan Date: 15-Dec-05

Lead Agency: USFWS

Lead Office: Sacramento Fish And Wildlife Office
(916) 414-6600)

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Delta green ground beetle (Elaphrus viridis)	1	4.1.3.4	Implement research on dispersal mechanisms of delta green ground beetle.	Not Started			Contractor	Research: Migration	Species Expert	
Delta green ground beetle (Elaphrus viridis)	2	2.5.6.1	Reintroduce delta green ground beetle at appropriate sites.	Not Started			Conservation Organizations, U.S. Fish and Wildlife Service, California Department of Fish and Game	Management: Reintroduction	Contract	Assumes labor cost to locate beetles for translocation
Delta green ground beetle (Elaphrus viridis)	2	2.5.6.2	Monitor delta green ground beetle reintroductions.	Not Started			Conservation Organizations	Research: Population Surveys	Species Expert	Assumes monitoring of one site during survey season
Delta green ground beetle (Elaphrus viridis)	3	2.5.6.3	Apply success criteria to reintroductions and modify techniques as necessary to achieve recovery and long term conservation of the delta green ground beetle.	Not Started			To be decided	Management: Reintroduction	Contract	Costs will vary depending on actions necessary to obtain success criteria

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Delta green ground beetle (<i>Elaphrus viridis</i>), Vernal pool tadpole shrimp (<i>Lepidurus packardi</i>), Hoover's spurge (<i>Chamaesyce hooveri</i>), Colusa grass (<i>Neostapfia colusana</i>), Hairy Orcutt grass (<i>Orcuttia pilosa</i>), Longhorn fairy shrimp (<i>Branchinecta longiantenna</i>), Fleshy owl's-clover (<i>Castilleja campestris</i> ssp. <i>succulenta</i>), Slender Orcutt grass (<i>Orcuttia tenuis</i>), Sacramento Orcutt grass (<i>Orcuttia viscosa</i>), Conservancy fairy shrimp (<i>Branchinecta conservatio</i>), Contra Costa goldfields (<i>Lasthenia conjugens</i>), Loch Lomond coyote thistle (<i>Eryngium constancei</i>), Butte County meadowfoam (<i>Limnanthes floccosa</i> ssp. <i>californica</i>), Lake County stonecrop (<i>Parvisedum leiocarpum</i>), Solano grass (<i>Tuctoria mucronata</i>), Few-flowered navarretia (<i>Navarretia leucocephala</i> ssp. <i>pauciflora</i> (=N. <i>pauciflora</i>)), San Joaquin Orcutt grass (<i>Orcuttia inaequalis</i>), Vernal pool fairy shrimp (<i>Branchinecta lynchi</i>), Many-flowered navarretia	1	3.2.2	Conduct standardized status surveys within each vernal pool region, starting with core areas.	Partially Complete	FY 2008	FY 2012	To be decided	Other	Contract, Species Expert	See 1.3.1-1.3.16 above. Species expert has been funded through CVPHRP to conduct plant surveys in Sacramento and San Joaquin Valleys. Final report will be submitted to FWS in 2012.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
(<i>Navarretia leucocephala</i> ssp. <i>plieantha</i>), <i>Greene's tectoria</i> (<i>Tectoria greenei</i>)										

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Delta green ground beetle (<i>Elaphrus viridis</i>), Vernal pool tadpole shrimp (<i>Lepidurus packardi</i>), Hoover's spurge (<i>Chamaesyce hooveri</i>), Colusa grass (<i>Neostapfia colusana</i>), Hairy Orcutt grass (<i>Orcuttia pilosa</i>), Longhorn fairy shrimp (<i>Branchinecta longiantenna</i>), Fleshy owl's-clover (<i>Castilleja campestris</i> ssp. <i>succulenta</i>), Slender Orcutt grass (<i>Orcuttia tenuis</i>), Sacramento Orcutt grass (<i>Orcuttia viscosa</i>), Conservancy fairy shrimp (<i>Branchinecta conservatio</i>), Contra Costa goldfields (<i>Lasthenia conjugens</i>), Loch Lomond coyote thistle (<i>Eryngium constancei</i>), Butte County meadowfoam (<i>Limnanthes floccosa</i> ssp. <i>californica</i>), Lake County stonecrop (<i>Parvisedum leiocarpum</i>), Solano grass (<i>Tuctoria mucronata</i>), Few-flowered navarretia (<i>Navarretia leucocephala</i> ssp. <i>pauciflora</i> (=N. <i>pauciflora</i>)), San Joaquin Orcutt grass (<i>Orcuttia inaequalis</i>), Vernal pool fairy shrimp (<i>Branchinecta lynchi</i>), Many-flowered navarretia	2	3.3.2	Conduct status reviews of listed species by vernal pool region.	Ongoing Current	FY 2006		U.S. Fish and Wildlife Service	Other: Regulations	Contract	Assumes 6 months review based on cost per species

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
(<i>Navarretia leucocephala</i> ssp. <i>plieantha</i>), <i>Greene's tectoria</i> (<i>Tectoria greenei</i>)										

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Delta green ground beetle (<i>Elaphrus viridis</i>), Vernal pool tadpole shrimp (<i>Lepidurus packardi</i>), Hoover's spurge (<i>Chamaesyce hooveri</i>), Colusa grass (<i>Neostapfia colusana</i>), Hairy Orcutt grass (<i>Orcuttia pilosa</i>), Longhorn fairy shrimp (<i>Branchinecta longiantenna</i>), Fleshy owl's-clover (<i>Castilleja campestris</i> ssp. <i>succulenta</i>), Slender Orcutt grass (<i>Orcuttia tenuis</i>), Sacramento Orcutt grass (<i>Orcuttia viscosa</i>), Conservancy fairy shrimp (<i>Branchinecta conservatio</i>), Contra Costa goldfields (<i>Lasthenia conjugens</i>), Loch Lomond coyote thistle (<i>Eryngium constancei</i>), Butte County meadowfoam (<i>Limnanthes floccosa</i> ssp. <i>californica</i>), Lake County stonecrop (<i>Parvisedum leiocarpum</i>), Solano grass (<i>Tuctoria mucronata</i>), Few-flowered navarretia (<i>Navarretia leucocephala</i> ssp. <i>pauciflora</i> (=N. <i>pauciflora</i>)), San Joaquin Orcutt grass (<i>Orcuttia inaequalis</i>), Vernal pool fairy shrimp (<i>Branchinecta lynchi</i>), Many-flowered navarretia	3	4.2.4.3	Develop hydrologic models to predict effects of hydrologic modifications in various situations.	Ongoing Current			U.S. Department of Defense, U.S. Fish and Wildlife Service, Contractor	Research: Other Information	Graduate Student	Assumes costs for data collection and modeling. FWS is partially funding a grad student to study subsurface water flow in natural and created vernal pools. Project will be complete in approximately 2013.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
(<i>Navarretia leucocephala</i> ssp. <i>plieantha</i>), <i>Greene's tectoria</i> (<i>Tectoria greenei</i>)										

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Delta green ground beetle (<i>Elaphrus viridis</i>), Vernal pool tadpole shrimp (<i>Lepidurus packardi</i>), Hoover's spurge (<i>Chamaesyce hooveri</i>), Colusa grass (<i>Neostapfia colusana</i>), Hairy Orcutt grass (<i>Orcuttia pilosa</i>), Longhorn fairy shrimp (<i>Branchinecta longiantenna</i>), Fleshy owl's-clover (<i>Castilleja campestris</i> ssp. <i>succulenta</i>), Slender Orcutt grass (<i>Orcuttia tenuis</i>), Sacramento Orcutt grass (<i>Orcuttia viscosa</i>), Conservancy fairy shrimp (<i>Branchinecta conservatio</i>), Contra Costa goldfields (<i>Lasthenia conjugens</i>), Loch Lomond coyote thistle (<i>Eryngium constancei</i>), Butte County meadowfoam (<i>Limnanthes floccosa</i> ssp. <i>californica</i>), Lake County stonecrop (<i>Parvisedum leiocarpum</i>), Solano grass (<i>Tuctoria mucronata</i>), Few-flowered navarretia (<i>Navarretia leucocephala</i> ssp. <i>pauciflora</i> (=N. <i>pauciflora</i>)), San Joaquin Orcutt grass (<i>Orcuttia inaequalis</i>), Vernal pool fairy shrimp (<i>Branchinecta lynchi</i>), Many-flowered navarretia	1	5.1	Form a single vernal pool recovery implementation team.	Complete	FY 2008	FY 2009	U.S. Fish and Wildlife Service	Management: Planning	Species Expert, Volunteer	Assumes staff time cost to organize implementation team meetings

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
(<i>Navarretia leucocephala</i> ssp. <i>plieantha</i>), <i>Greene's tectoria</i> (<i>Tectoria greenei</i>)										

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Delta green ground beetle (<i>Elaphrus viridis</i>), Vernal pool tadpole shrimp (<i>Lepidurus packardi</i>), Hoover's spurge (<i>Chamaesyce hooveri</i>), Colusa grass (<i>Neostapfia colusana</i>), Hairy Orcutt grass (<i>Orcuttia pilosa</i>), Longhorn fairy shrimp (<i>Branchinecta longiantenna</i>), Fleshy owl's-clover (<i>Castilleja campestris</i> ssp. <i>succulenta</i>), Slender Orcutt grass (<i>Orcuttia tenuis</i>), Sacramento Orcutt grass (<i>Orcuttia viscosa</i>), Conservancy fairy shrimp (<i>Branchinecta conservatio</i>), Contra Costa goldfields (<i>Lasthenia conjugens</i>), Loch Lomond coyote thistle (<i>Eryngium constancei</i>), Butte County meadowfoam (<i>Limnanthes floccosa</i> ssp. <i>californica</i>), Lake County stonecrop (<i>Parvisedum leiocarpum</i>), Solano grass (<i>Tuctoria mucronata</i>), Few-flowered navarretia (<i>Navarretia leucocephala</i> ssp. <i>pauciflora</i> (=N. <i>pauciflora</i>)), San Joaquin Orcutt grass (<i>Orcuttia inaequalis</i>), Vernal pool fairy shrimp (<i>Branchinecta lynchi</i>), Many-flowered navarretia	3	5.3.1	Periodically review progress toward recovery of all listed species and identify those species that require a change in status (downlisting, delisting, uplisting) or emergency actions.	Ongoing Current	FY 2006		U.S. Fish and Wildlife Service	Management: Reintroduction	Contract, Internal Technical Assistance	Cost assumes review every five years until recovery.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
(<i>Navarretia leucocephala</i> ssp. <i>plieantha</i>), Greene's tectoria (<i>Tectoria greenei</i>)										